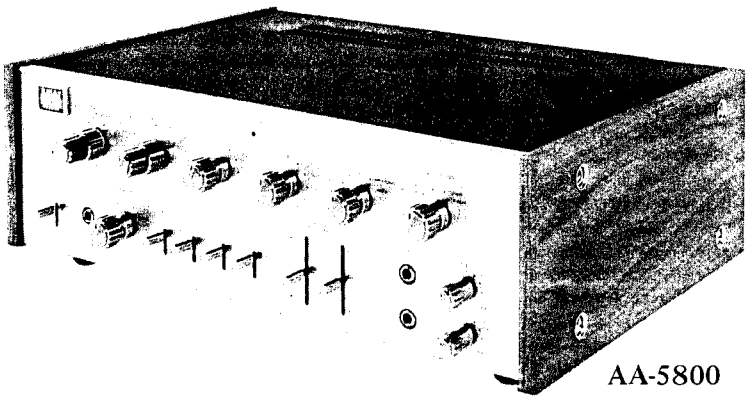
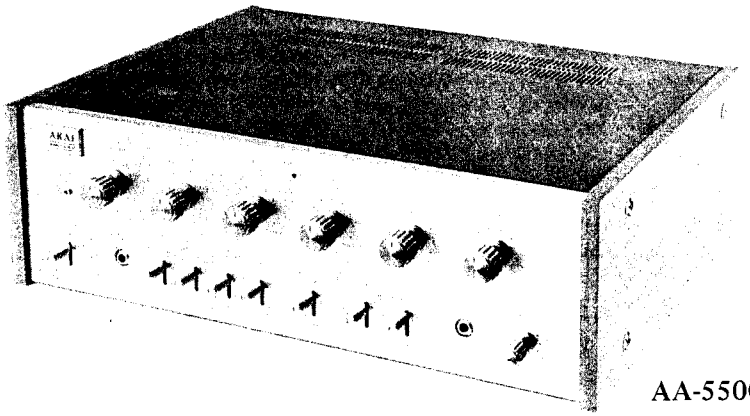
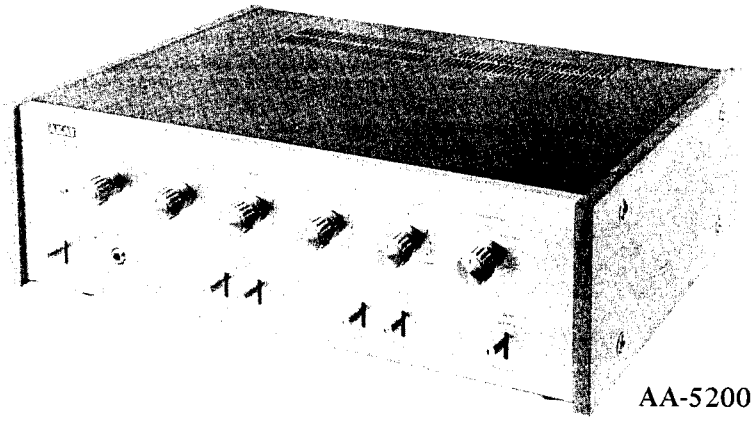


AA-5800



AA-5500



AA-5200

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WHEN PLACING ORDER FOR PARTS, PLEASE USE SEPARATE PARTS LIST.

I . SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5800

MUSIC POWER OUTPUT	160 W/4 Ω (80 W/80 W), 120 W/8 Ω (60 W/60 W)
RATED POWER OUTPUT	120 W/4 Ω (60 W/60 W), 90 W/8 Ω (45 W/45 W) 0.3% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV PHONO 1, PHONO 2 : 3 mV TUNER : 150 mV TAPE 1, TAPE 2 : 185 mV MIC : 1.2 mV
HARMONIC DISTORTION	Less than 0.1% at 30 W, 8 Ω
FREQUENCY RESPONSE	10 to 50,000 Hz −3 dB (*20 to 50,000 Hz −3 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than −50 dBm Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 75 dB PHONO 1, PHONO 2 : More than 65 dB TUNER : More than 75 dB TAPE 1, TAPE 2 : More than 75 dB MIC : More than 53 dB
TONE CONTROLS	BASS : ±10 dB at 100 Hz TREBLE : ±10 dB at 10,000 Hz
LOUDNESS CONTROL	7 ± 1.5 dB at 100 Hz and 4 ± 1.5 dB at 10 kHz (−2 dBm output)
FILTERS	LOW CUT FILTER : −12 dB at 50 Hz HIGH CUT FILTER : −7 dB at 10 kHz
POWER BAND WIDTH	20 to 25,000 Hz at 22.5 W, 8 Ω, 0.3% I.H.F
TRANSISTORS	2SA 545 (L) (M) . . . 1 — 2SC 853 (L) (M) . . . 2 2SA 606 (L) (M) . . . 2 — 2SC 900 (E) (F) . . . 6 2SA 640 (E) (F) . . . 6 — 2SC 959 (L) (M) . . . 6 2SA 641 (L) (M) (N) . . . 1 — 2SC 1222 (E) (F) . . . 14 2SA 649 (L) (H) . . . 2 — 2SD 218 (L) (M) . . . 2
IC	LD-3120 . . . 2
DIODES	IN34A . . . 5 10D1 . . . 4 5B4 . . . 1
VARISTOR	STV-3 . . . 2
SCR	1RC-5 . . . 3
POWER SUPPLY	100 to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	300 W
DIMENSIONS	432(W) x 143(H) x 330(D) mm (17.2" x 5.7" x 13.2")
WEIGHT	11.5 kg (25.3 lbs)
REMARKS	Specifications subject to change without notice.

An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5500

MUSIC POWER OUTPUT	120 W/4 Ω (60 W/60 W), 80 W/8 Ω (40 W/40 W)
RATED POWER OUTPUT	90 W/4 Ω (45 W/45 W), 60 W/8 Ω (30 W/30 W) 0.8% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV TUNER : 150 mV PHONO 1, PHONO 2 : 3 mV TAPE 1, TAPE 2 : 150 mV MIC : 1 mV (*1.2 mV)
HARMONIC DISTORTION	Less than 0.1% at 10 W, 8 Ω
FREQUENCY RESPONSE	20 to 50,000 Hz −3 dB (*20 to 50,000 Hz −5 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than −44 dBm, Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 70 dB TUNER : More than 70 dB PHONO 1, PHONO 2 : More than 65 dB (*58 dB) TAPE 1, TAPE 2 : More than 70 dB MIC : 51 dB
TONE CONTROLS	BASS : ±10 dB at 100 Hz TREBLE : ±10 dB at 10,000 Hz
LOUDNESS CONTROL	7 ± 1.5 dB at 100 Hz and 4 ± 1.5 dB at 10 kHz (−10 dBm output)
FILTERS	LOW CUT FILTER : −12.5 ± 1.5 dB at 50 Hz HIGH CUT FILTER : −6 ± 1.5 dB at 10 kHz
MUTE LEVEL	−20 ± 1 dB
POWER BAND WIDTH	20 to 45,000 Hz (*20 to 30,000 Hz at 15 W, 8 Ω, 0.8% I.H.F)
TRANSISTORS	2SA 606 (L) (M) . . . 2 2SC 900 (E) (F) (H) . . . 6 2SC 959 (L) (M) . . . 4 2SC 968 (3) (4) . . . 1 2SD 188 (L) (M) . . . 4
IC	LD-3120 . . . 5
DIODES	S15-15 . . . 8
	IN34A . . . 2
VARISTOR	STV-3 . . . 2
SCR	IRC-5 . . . 1
POWER SUPPLY	100 V to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	300 W
DIMENSIONS	432(W) x 143(H) x 330(D) mm (17.2" x 5.7" x 13.2")
WEIGHT	9.9 kg (21.8 lbs)
REMARKS	Specifications subject to change without notice.

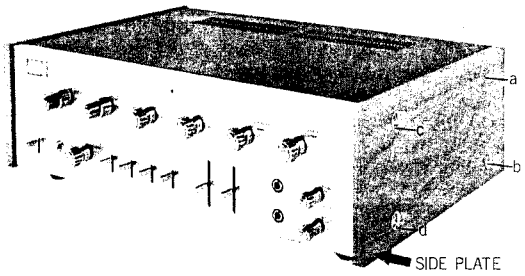
An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5200

MUSIC POWER OUTPUT	80 W/4 Ω (40 W/40 W), 60 W/8 Ω (30 W/30 W)
RATED POWER OUTPUT	60 W/4 Ω (30 W/30 W), 40 W/8 Ω (20 W/20 W) 0.8% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV TUNER : 150 mV PHONO : 3 mV TAPE : 150 mV
HARMONIC DISTORTION	Less than 0.1% at 10 W; 8 Ω
FREQUENCY RESPONSE	20 to 50,000 Hz −3 dB (*20 to 50,000 Hz −5 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than −50 dBm, Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 70 dB PHONO : More than 65 dB TUNER : More than 70 dB TAPE : More than 70 dB
TONE CONTROLS	BASS : ±10 dB at 100 Hz TREBLE : ±10 dB at 10,000 Hz
LOUDNESS CONTROL	7 ± 1.5 dB at 100 Hz and 4 ± 1.5 dB at 10 kHz (−10 dBm output)
FILTERS	LOW CUT FILTER : −12.5 ± 1.5 dB at 50 kHz HIGH CUT FILTER : −6 ± 1.5 dB at 10 kHz
POWER BAND WIDTH	20 to 45,000 Hz, (*20 to 30,000 Hz at 10W, 8 Ω, 0.8% I.H.F)
TRANSISTORS	2SA 545 (L) (M) . . . 2 2SC 853 (L) (M) . . . 4 2SC 900 (D) (F) (H) . . . 4 2SC 968 (3) (4) . . . 1 2SD 313 (E) (F) . . . 4
IC	LD-3120 . . . 4
DIODES	S15-15 . . . 8
VARISTOR	STV-3 . . . 2
POWER SUPPLY	100 V to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	150 W
DIMENSIONS	432(W) x 143(H) x 330(D) mm (17.2" x 5.7" x 13.2")
WEIGHT	9 kg (19.8 lbs)
REMARKS	Specifications subject to change without notice.

II. DISMANTLING OF AMPLIFIERS

1



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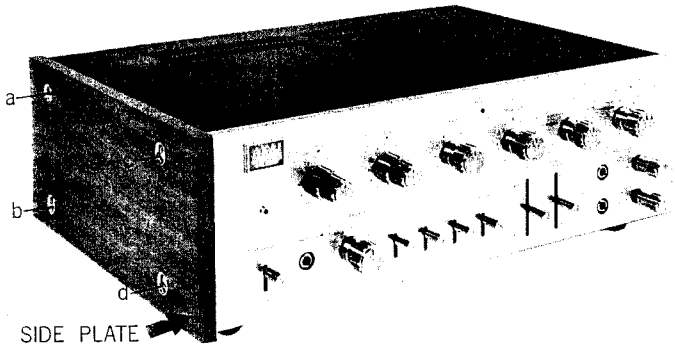

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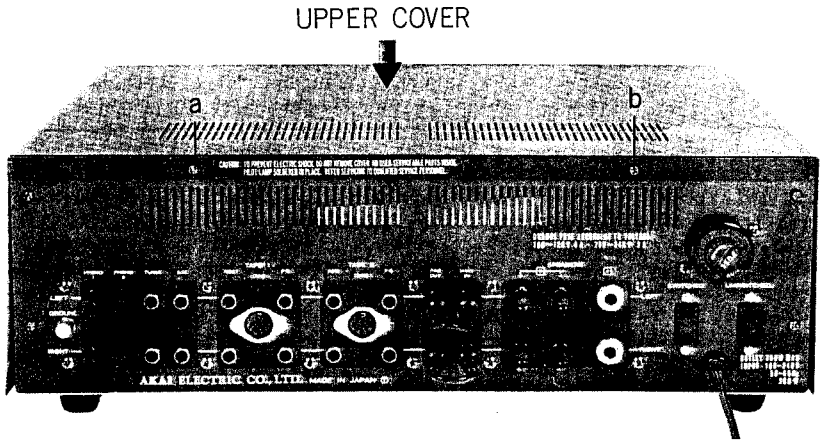

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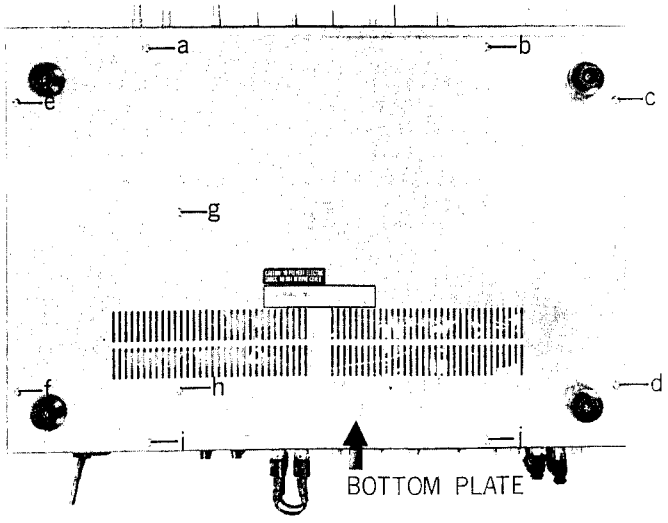
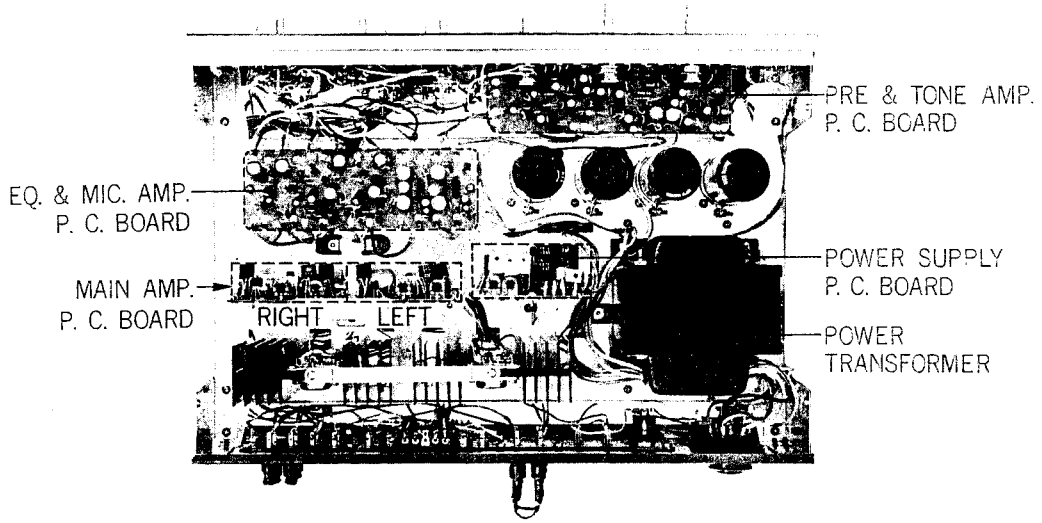
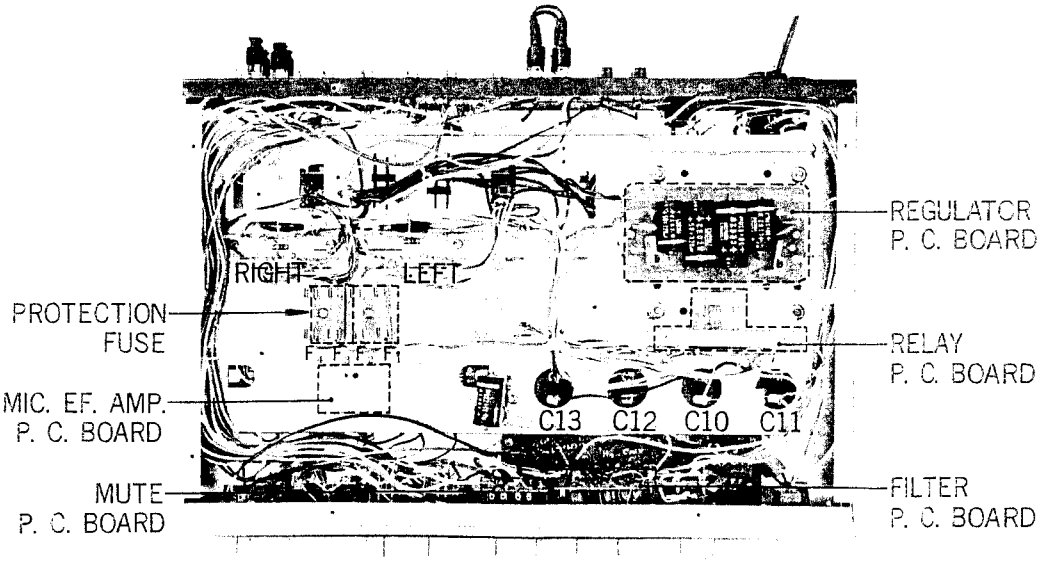
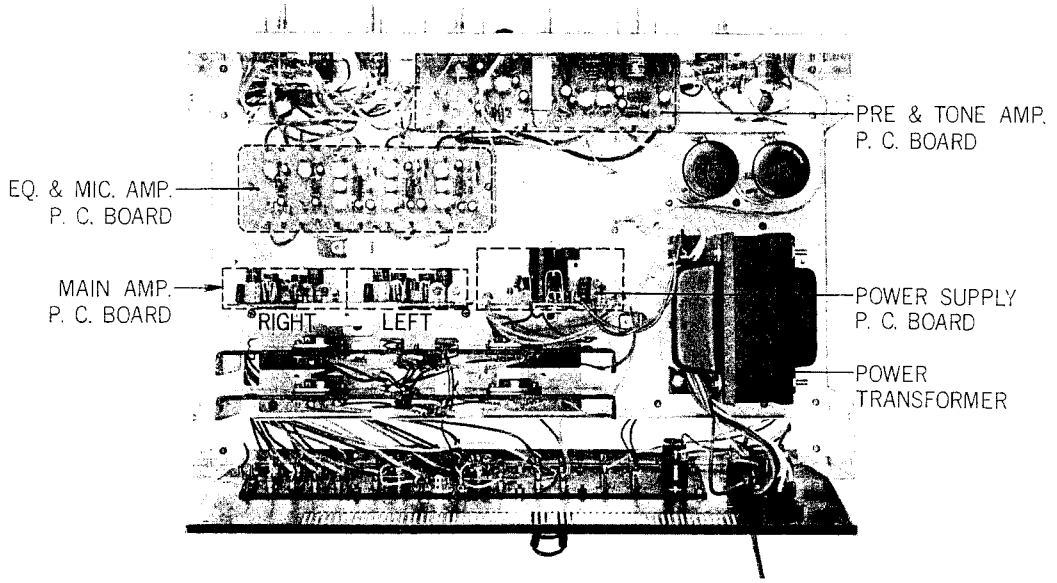


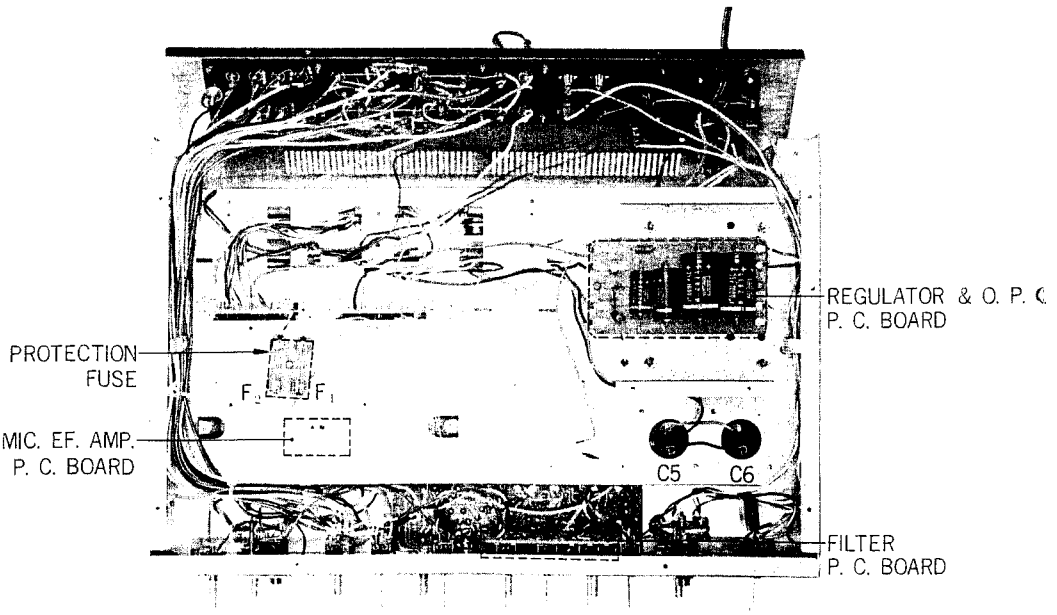
III. ARRANGEMENT OF MAIN PARTS

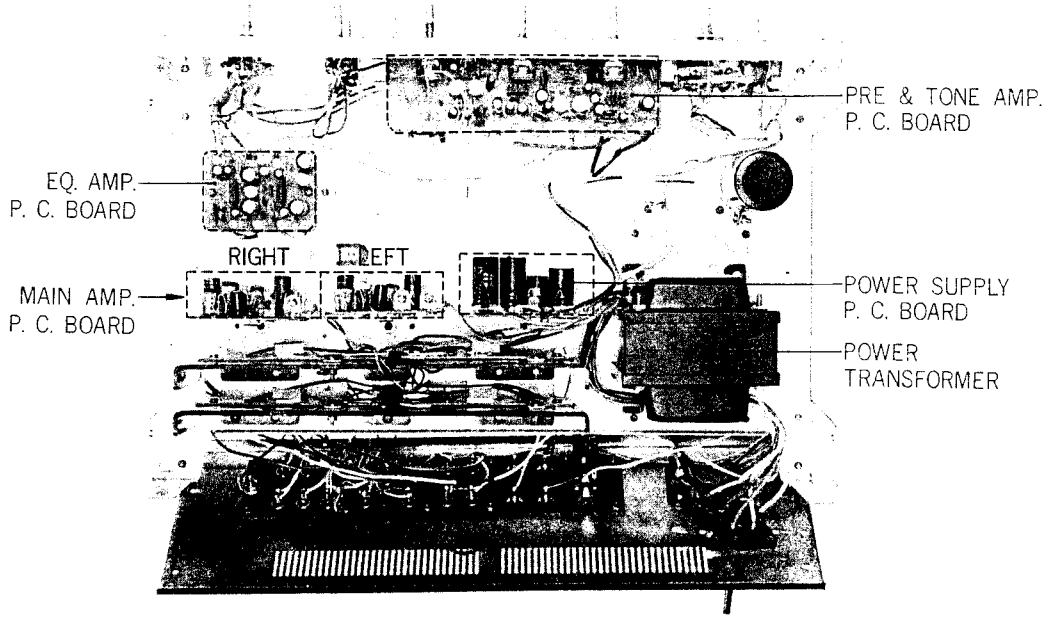
MODEL AA-5800

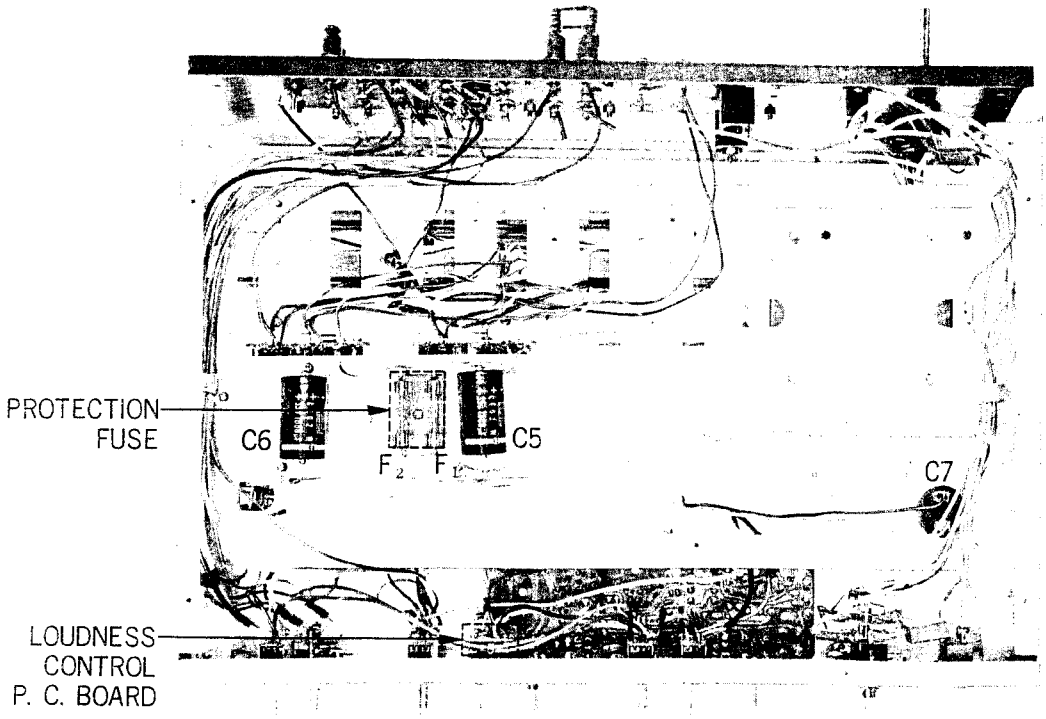





PRE & TONE AMP.
P. C. BOARD
EQ. & MIC. AMP.
P. C. BOARD
MAIN AMP.
P. C. BOARD
RIGHT
LEFT
POWER SUPPLY
P. C. BOARD
POWER
TRANSFORMER


REGULATOR & O. P. C
P. C. BOARD
PROTECTION
FUSE
F2
F1
MIC. EF. AMP.
P. C. BOARD
C5
C6
FILTER
P. C. BOARD


PRE & TONE AMP.
P. C. BOARD
EQ. AMP.
P. C. BOARD
RIGHT
LEFT
MAIN AMP.
P. C. BOARD
POWER SUPPLY
P. C. BOARD
POWER
TRANSFORMER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FUSE
C6
F2
F1
C5
C7
LOUDNESS
CONTROL
P. C. BOARD

IV. MEASURING METHOD

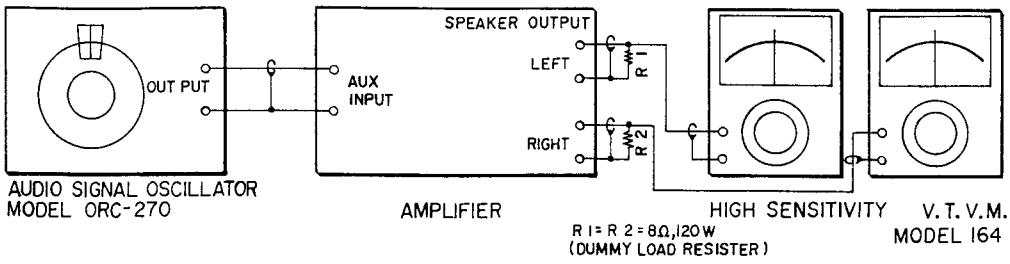


Fig. 1

1. FREQUENCY RESPONSE

Connect measuring instruments as shown in Fig. 1. Set Tone Controls to "FLAT" and supply a 1 kHz rated level signal to the AUX input terminal from the Audio Signal Oscillator. Then set Volume to obtain a "0" dB indication on both right and left High Sensitivity V.T.V.M. Under these conditions, take Audio Signal Oscillator readings in the variable range of 18 to 50,000 Hz and plot the levels on a graph. Let "0" dBm represent "0" dB and within a −3 dB range width from this point will represent Frequency Response.

2. POWER BAND WIDTH

Connect measuring instruments as shown in Fig. 1. Set Tone Controls to "FLAT" and supply a 1 kHz rated level signal to the AUX input terminal. Then increase the volume to obtain a 19 dBm indication on both right and left High Sensitivity V.T.V.M. Under these conditions, take Audio Signal Oscillator readings in the variable range of 18 to 50,000 Hz and plot the levels on a graph. Let 19 dBm output represent "0" VU, and within a −6 dB range width from this point will represent Power Band Width.

3. HUM AND NOISE

Connect measuring instruments as shown in Fig. 1. Turn volume to minimum. Take a High Sensitivity V.T.V.M. reading of the amplifier noise and hum element.

4. SIGNAL TO NOISE RATIO

Connect measuring instruments as shown in Fig. 1. Supply a 1 kHz rated input signal to the AUX input terminal from the Audio Signal Oscillator.
Turn volume to maximum and take a High Sensitivity V.T.V.M. reading of the output level. Let the output level at this time represent maximum output level.
Next, disconnect the lead wire from the Audio Signal Oscillator connected to the Aux input terminal and take a High Sensitivity V.T.V.M. reading of the noise element under a non-input condition. Let this output represent noise output level. Convert these two output levels into decibels and combine.

S/N Ratio formula :

maximum output level 20 log 11 V = 23 dBm
noise output level 20 log 2.5 mV = −50 dBm
S/N ratio = 23 dBm + 50 dBm = 73 dB

V. MAIN AMPLIFIER ADJUSTMENTS

1. IDLING CURRENT ADJUSTMENT (See Fig. 2)

Turn volume to minimum. Remove protector fuse from fuse holder and connect an Ammeter to the fuse terminals (match + and –). Adjust semi-fixed Resistor VR-2 to obtain an Ammeter indication according to specified value.

	AA-5200	AA-5500	AA-5800
Idling Current	35 mA	40 mA	40 mA
Protector Fuse	2A	4A	5A

Fig. 2

2. OUTPUT SIGNAL WAVEFORM ADJUSTMENT (See Figs. 3 and 4)

1) A-5200, AA-5500

After Idling Current Adjustment has been completed to specifications, replace protector fuse (See Fig. 2 for correct value), and connect measuring instruments as shown in Fig. 3.

Turn volume to maximum and at the point when the amplifier output waveform becomes slightly distorted, supply input voltage to the AUX terminal from the Audio Signal Oscillator. Then adjust semi-fixed Resistor VR-1 so that the clipping position of the upper and lower parts of the waveform on the oscilloscope are equal.

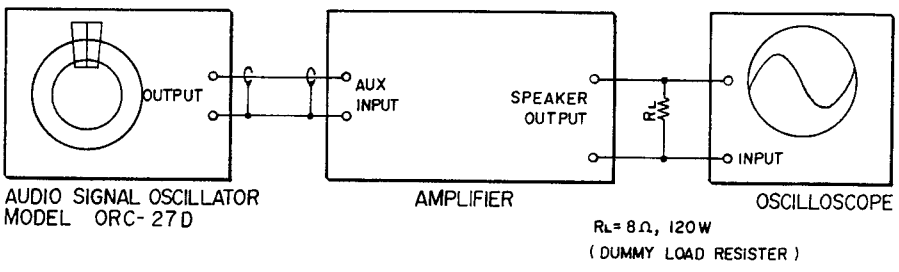


Fig. 3

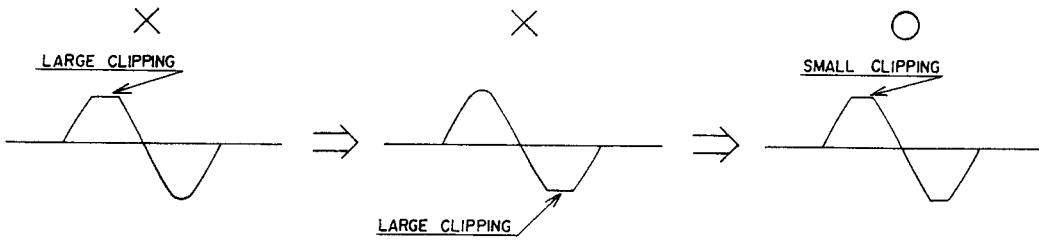


Fig. 4

Waveforms when the output waveform adjustment semi-fixed resistor is rotated.

3. ZERO ELECTRICAL POTENTIAL ADJUSTMENT (AA-5800, See Fig. 5)

Connect a V.T.V.M. (Model 107A) to terminal ⑦ of main amplifier card and to chassis as shown in the figure and adjust VR-1 (300 Ω B) to obtain a "0" V.T.V.M. indication.

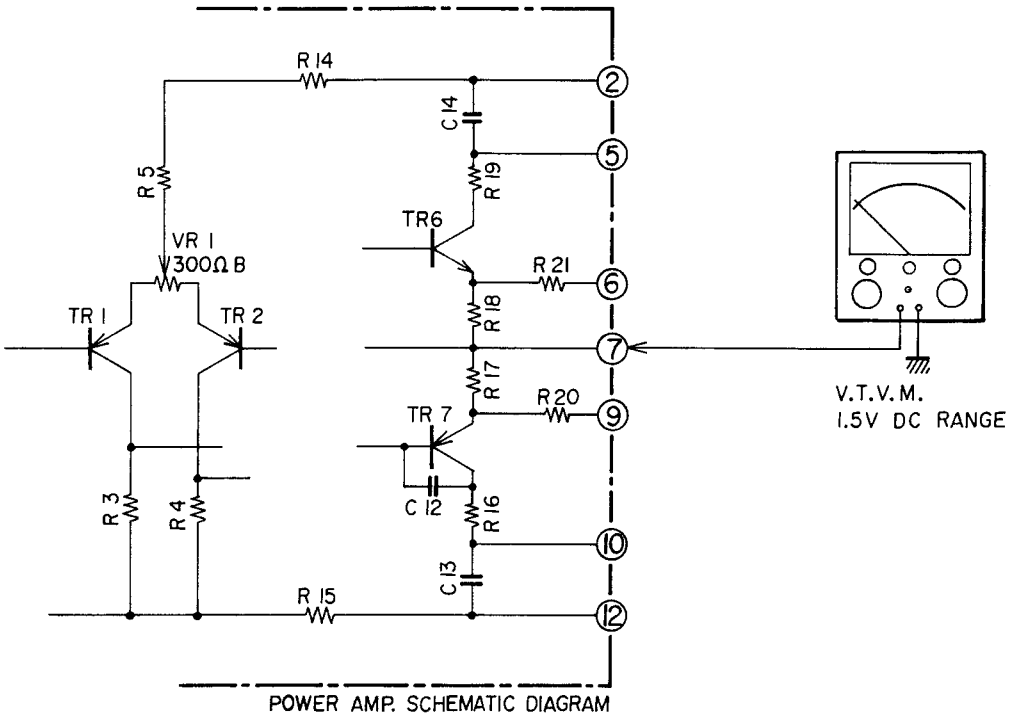


Fig. 5

VI. E.P.C. (ELECTRIC PROTECTION CIRCUIT) ADJUSTMENT

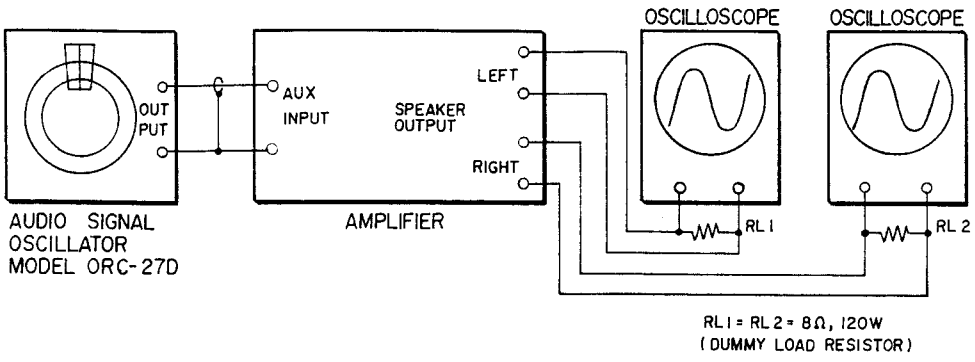


Fig. 6

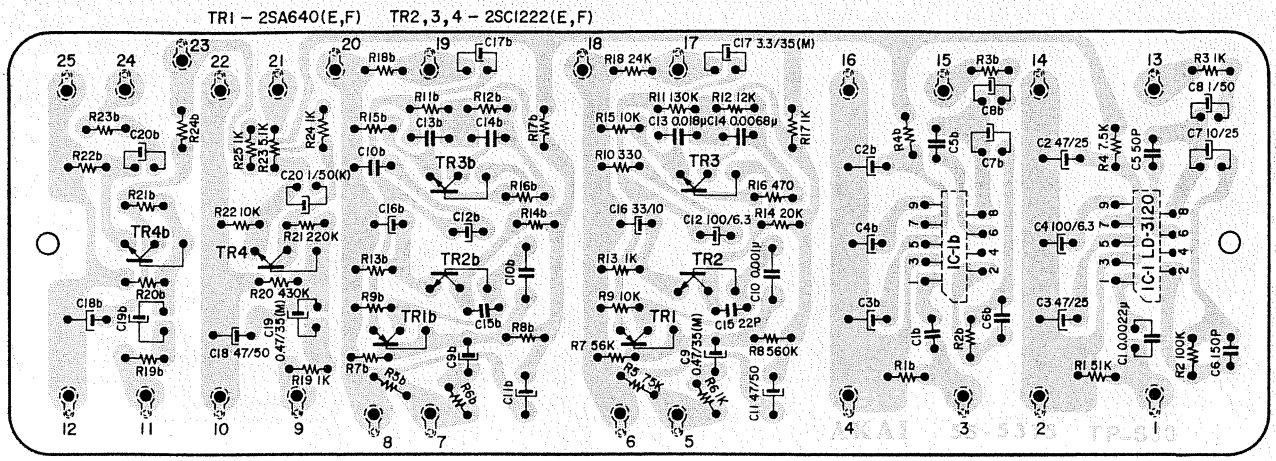
1. Set amplifier Mode Switch to "STEREO", Tone Controls to "FLAT", and Balance Control to center position.
   Supply rated input to AUX input, and set volume to obtain a +5 dBm speaker output on Model AA-5500 (+15 dB on Model AA-5800).
2. Turn E.P.C. Adjustment Semi-Fixed Resistor VR-1, VR-2 fully counter-clockwise (when facing machine and observing VR-1, VR-2 from the top of the set).
3. Short either the right or left channel speaker output and turn Semi-Fixed Resistor clockwise to the point at which the waveform on the oscilloscope is erased, stopping as soon as the output waveform is erased.

   Caution :
   Model AA-5800 is equipped with an E.P.C. Adjustment Semi-Fixed Resistor for each channel (VR-1, left channel; VR-2, right channel).
4. As soon as the Portector Lamp lights, quickly turn off the Power Switch.
5. Next, decrease the dummy load resistance to 4 Ω and confirm that E.P.C. does not operate when the volume is turned to maximum.

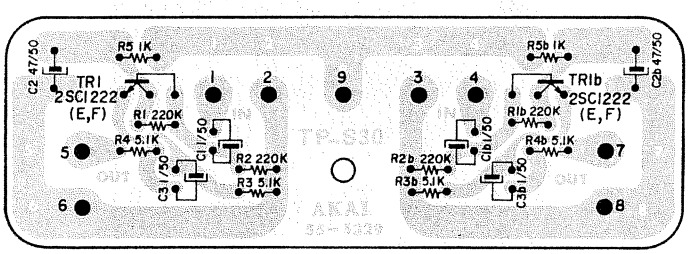
VII. COMPOSITE VIEWS OF COMPONENTS

MODEL AA-5800

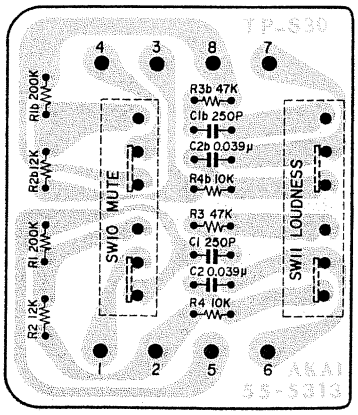
EQUALIZER MIC. AMP. P.C. BOARD (55-5315)



MIC. E-F. AMP. P.C. BOARD (55-5329)

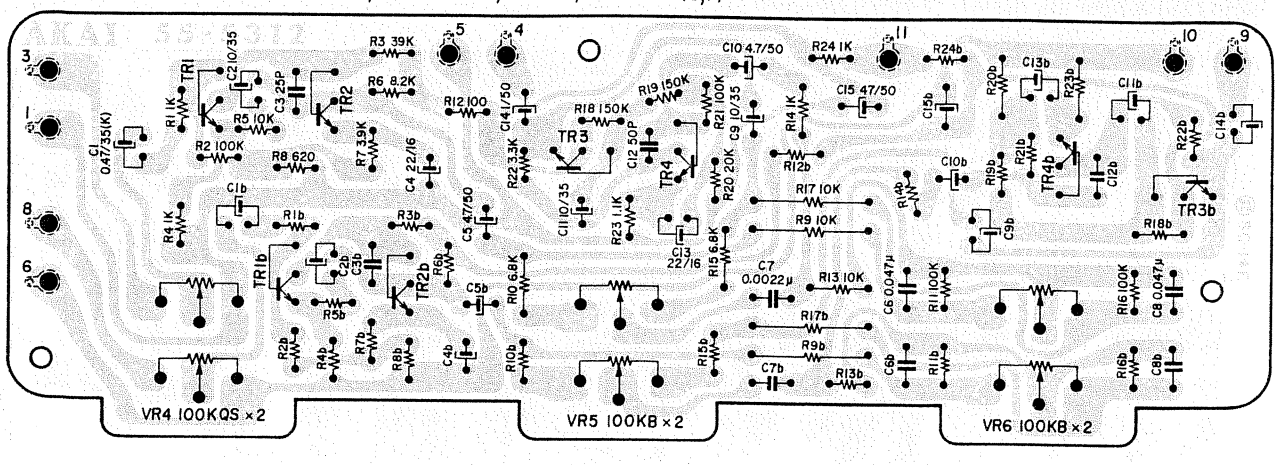


MUTE P.C. BOARD (55-5313)

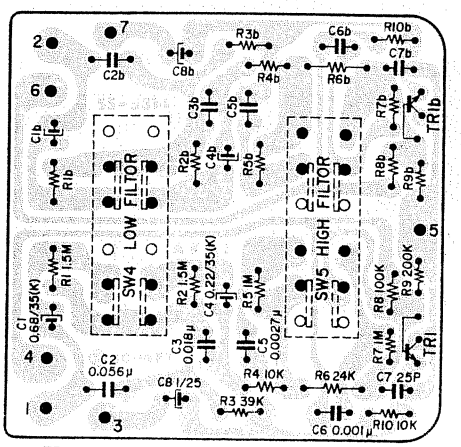


PRE TONE AMP. P.C. BOARD (55-5312)

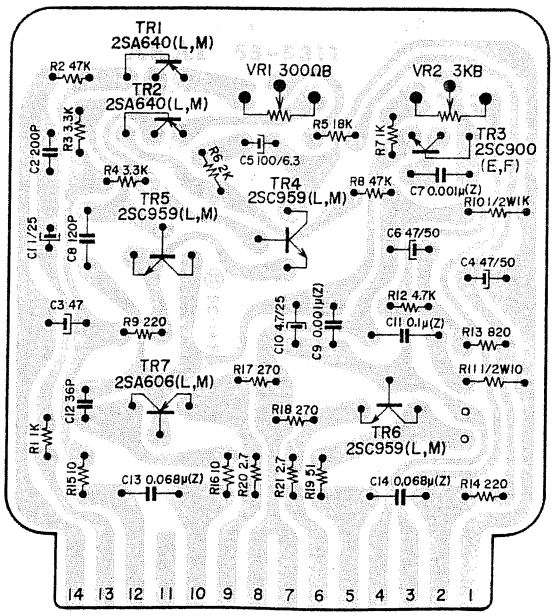
TR1,2 – 2SC1222(E,F) TR3,4 – 2SC900(E,F)



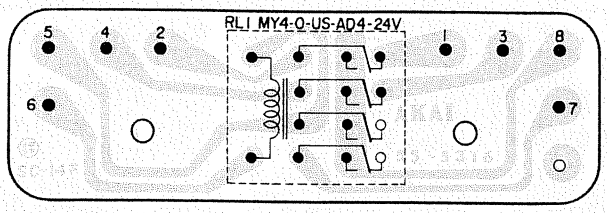
FILTER P.C. BOARD (55-5314)



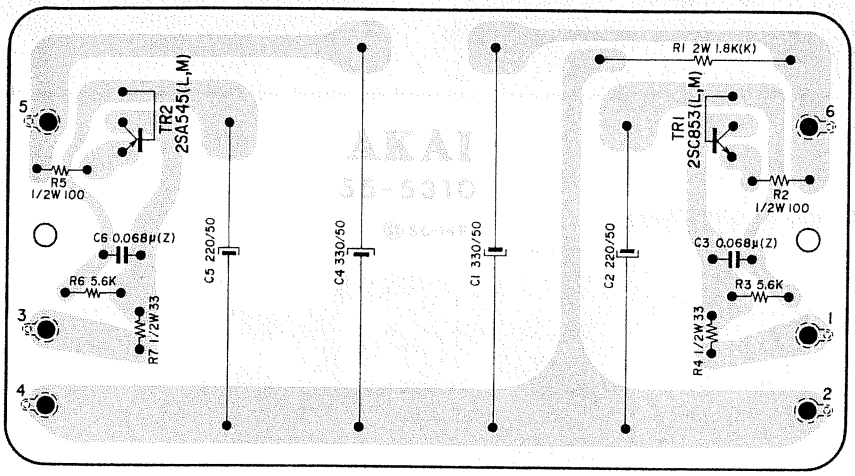
MAIN AMP. P.C. BOARD (55-5311)



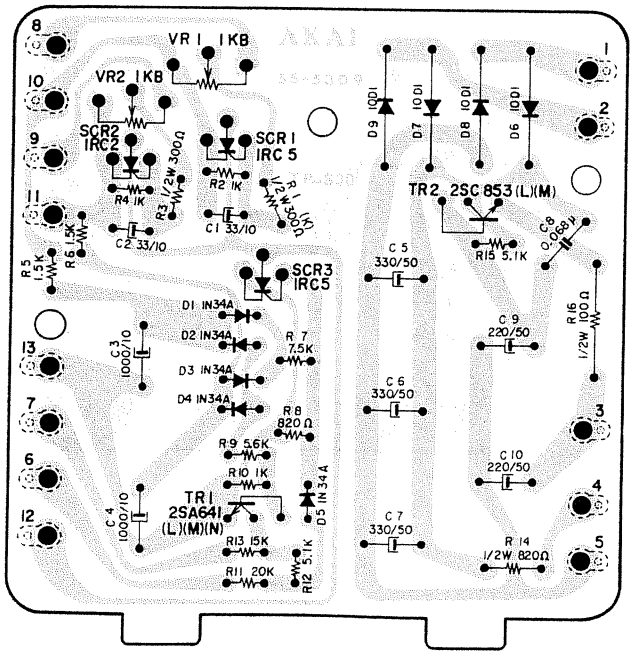
RELAY P.C. BOARD (55-5316)



REGULATOR P.C. BOARD (55-5310)

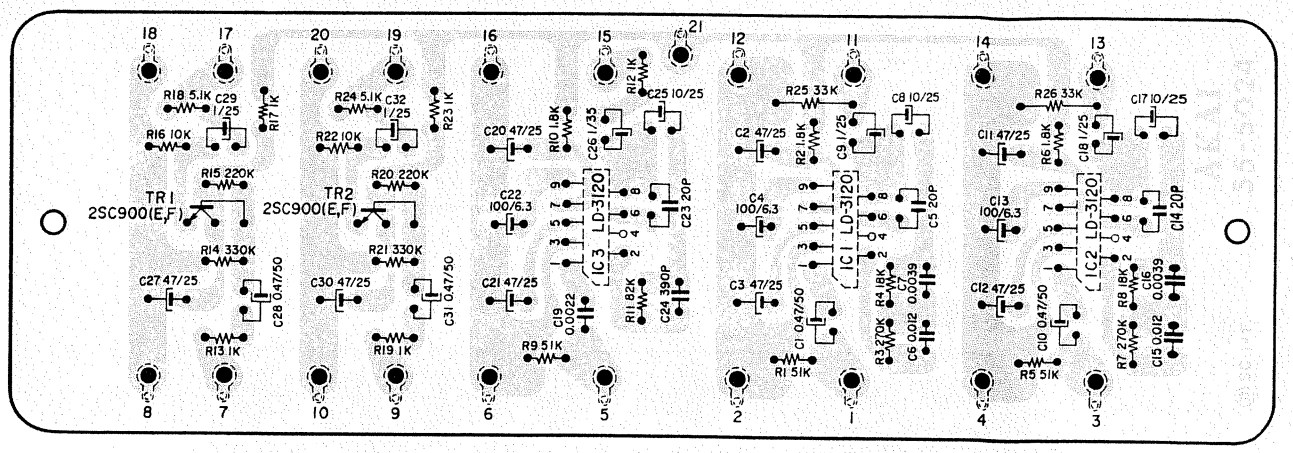


POWER SUPPLY P.C. BOARD (55-5309)

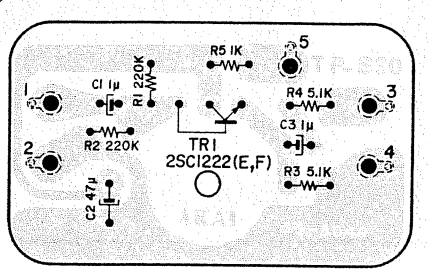


MODEL AA-5500

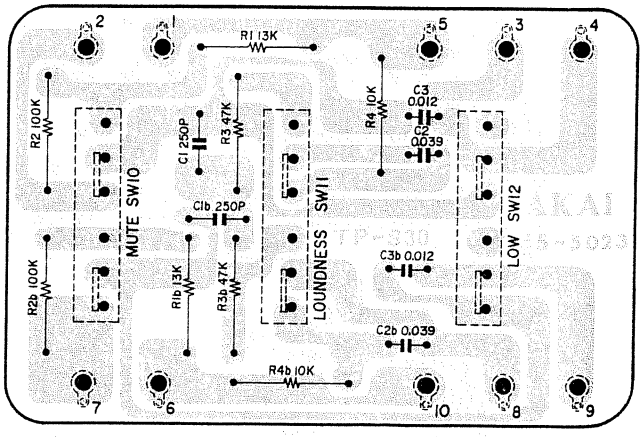
EQUALIZER & MIC. AMP. P.C. BOARD (55-5024)



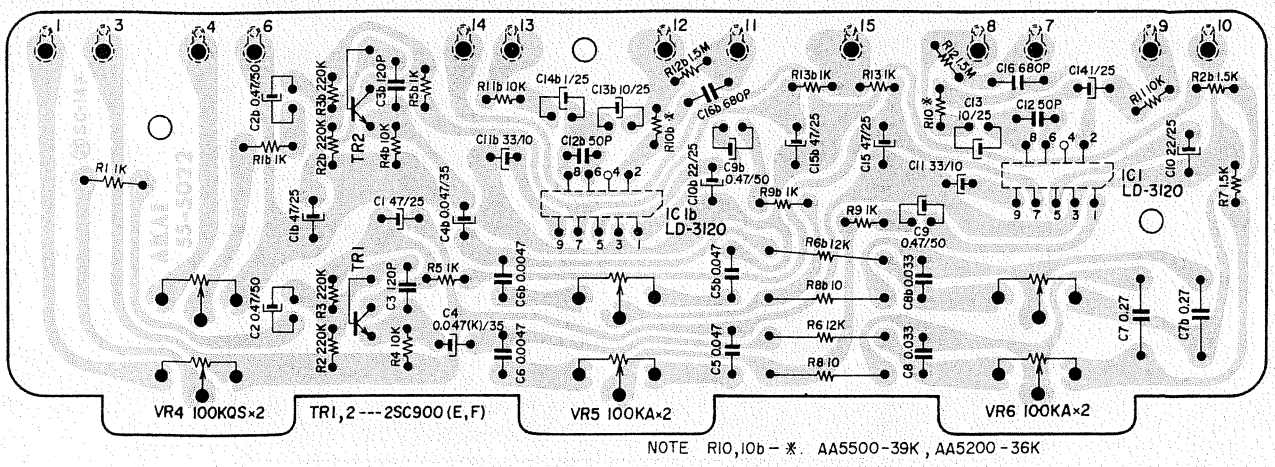
MIC. E-F. AMP. P.C. BOARD (55-5049)



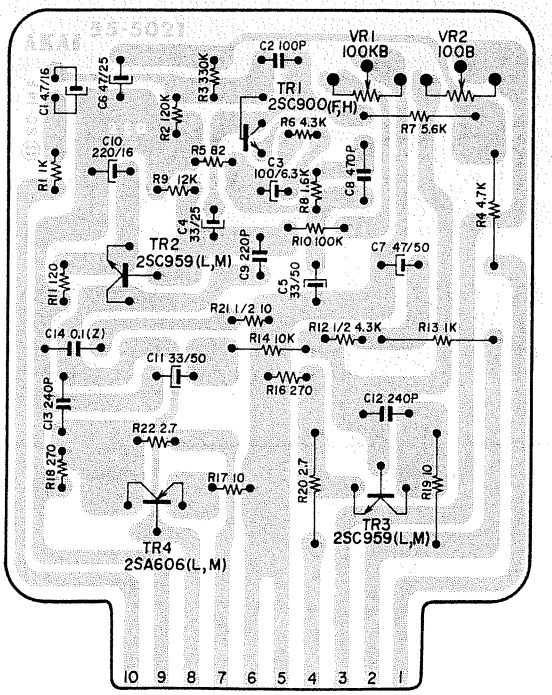
FILTER P.C. BOARD (55-5023)



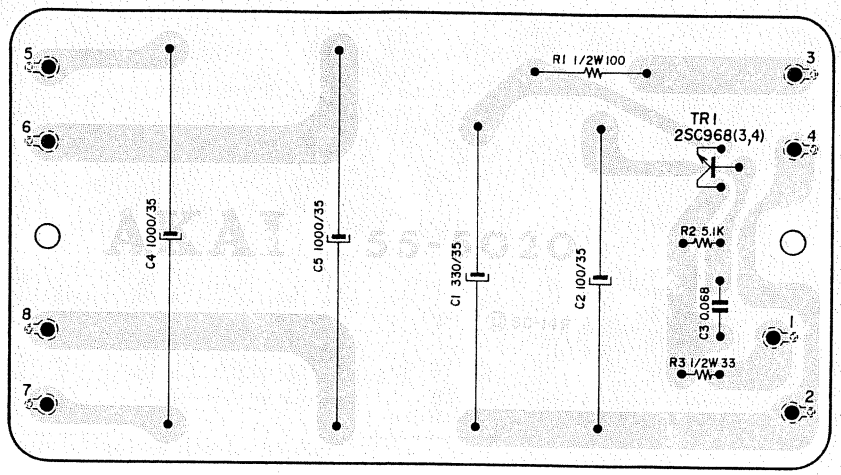
PRE TONE AMP. P.C. BOARD (55-5022)



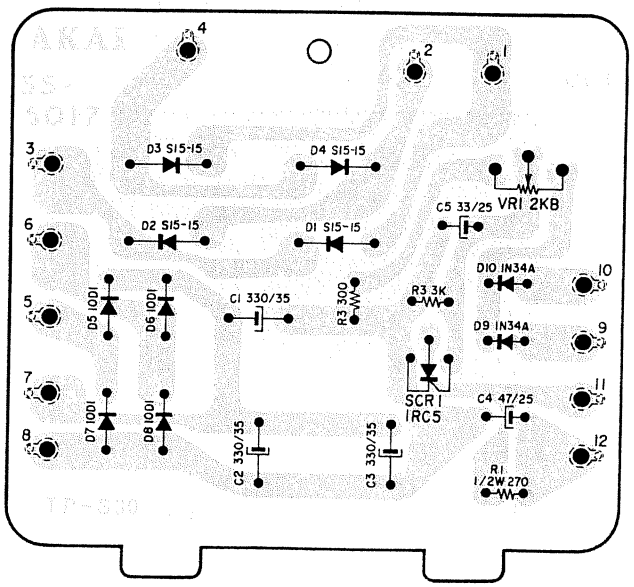
MAIN AMP. P.C. BOARD (55-5021)



REGULATOR & OPC. P.C. BOARD (55-5020)

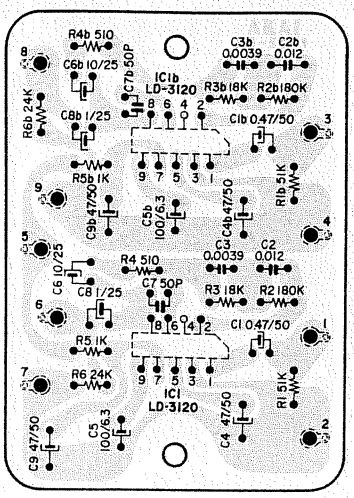


POWER SUPPLY P.C. BOARD (55-5017)

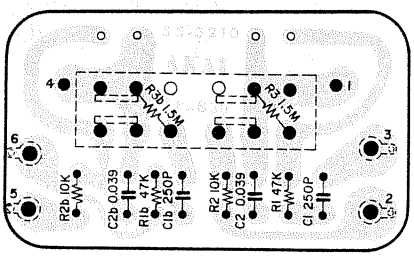


MODEL AA-5200

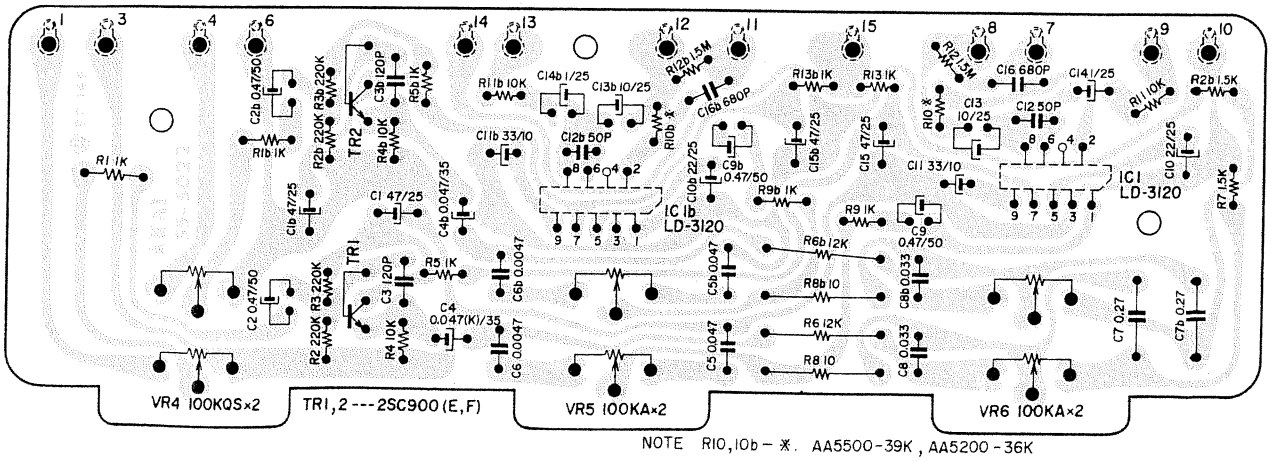
EQUALIZER AMP. P.C. BOARD (55-5211)



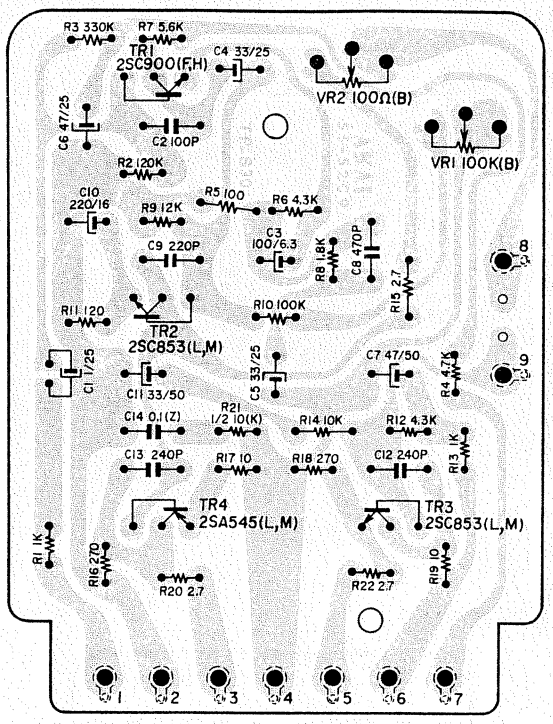
LOUDNESS CONTROL P.C. BOARD (55-5210)



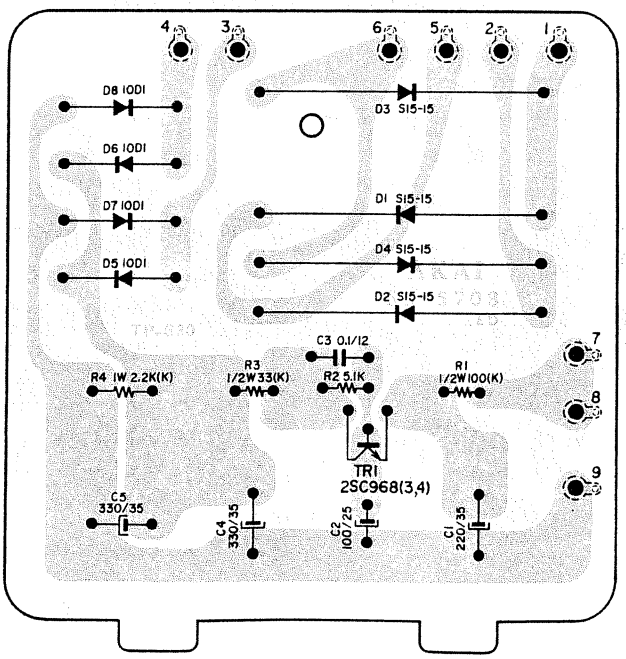
PRE TONE AMP. P.C. BOARD (55-5022)



MAIN AMP. P.C. BOARD (55-5209)



POWER SUPPLY P.C. BOARD (55-5208)



AA-5800

EQ MIC AMP P.C. BOARD. 55-5315

MIC E-F AMP P.C. BOARD. 55-5329

PRE. TONE AMP P.C. BOARD. 55-5312

MUTE. P.C. BOARD 55-5313

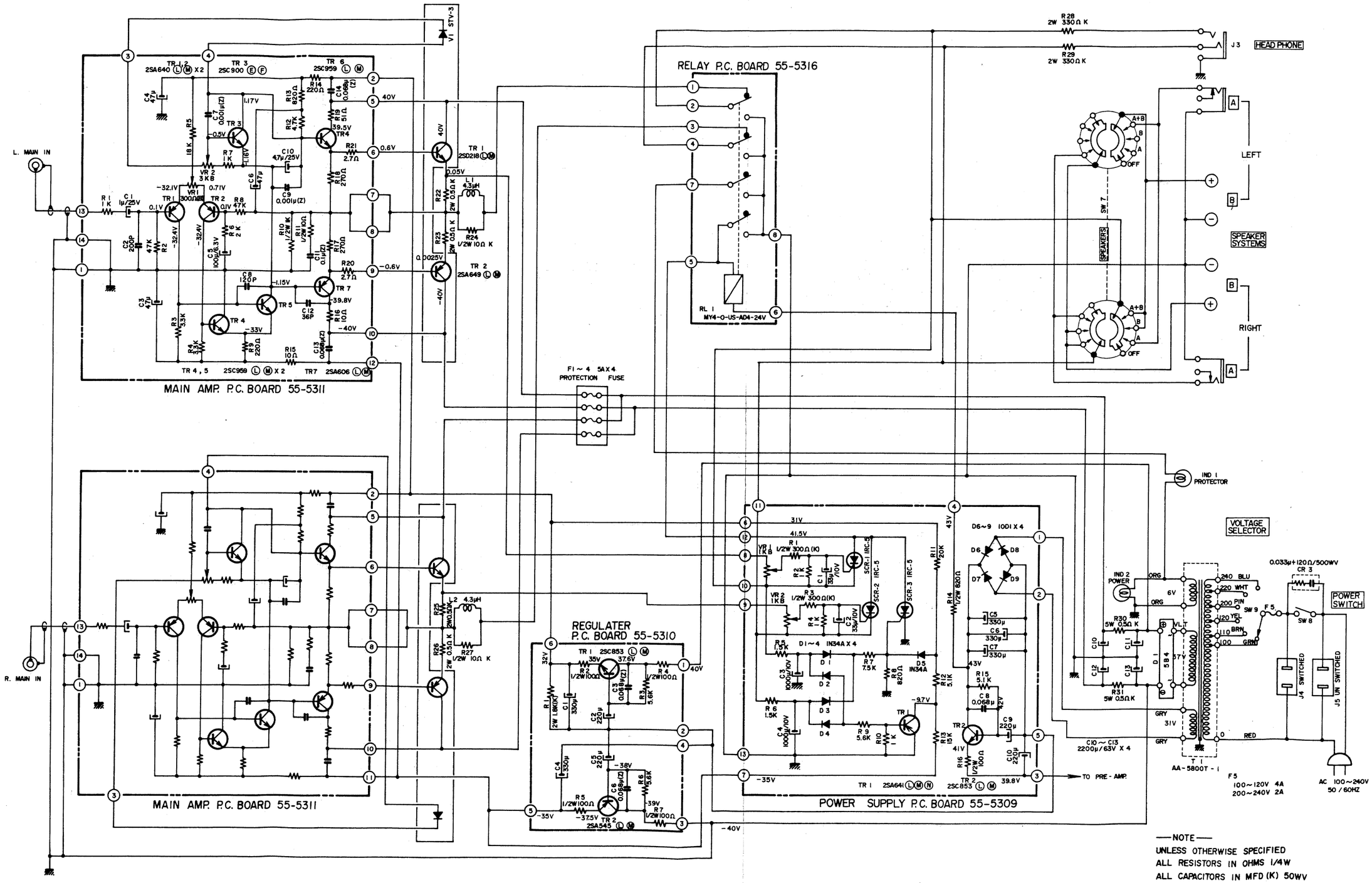
FILTER AMP P.C. BOARD. 55-5314

—NOTE—
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W
ALL CAPACITORS IN MFD.(K) 50WV

MIC JACK
L
R
J1
J2
LEFT
RIGHT
PHONO 1
PHONO 2
TUNER
AUX
SELECTOR SW 1
TAPE-1 DIN JACK
TAPE-2 DIN JACK
L PLAY BACK
R PLAY BACK
L. REC
R. REC
GROUND
TAPE DUB. SELECTOR
TAPE P.B. MODE
MODE
TO POWER SUPPLY P.C. BOARD ③
VOLUME
TREBLE
BASS
BALANCE
SW 10 MUTE
SW 11 LOUDNESS
SW 4 LOW FILTER
SW 5 HIGH FILTER
SW 2
SW 3
SW 6
VR 1,2 MIC. LEVEL
VR 3 HB50K X 2
VR 4 100K(S) X 2
VR 5 100K(B)X2
VR 6 100K(B) X 2
L. PRE OUT
R. PRE OUT

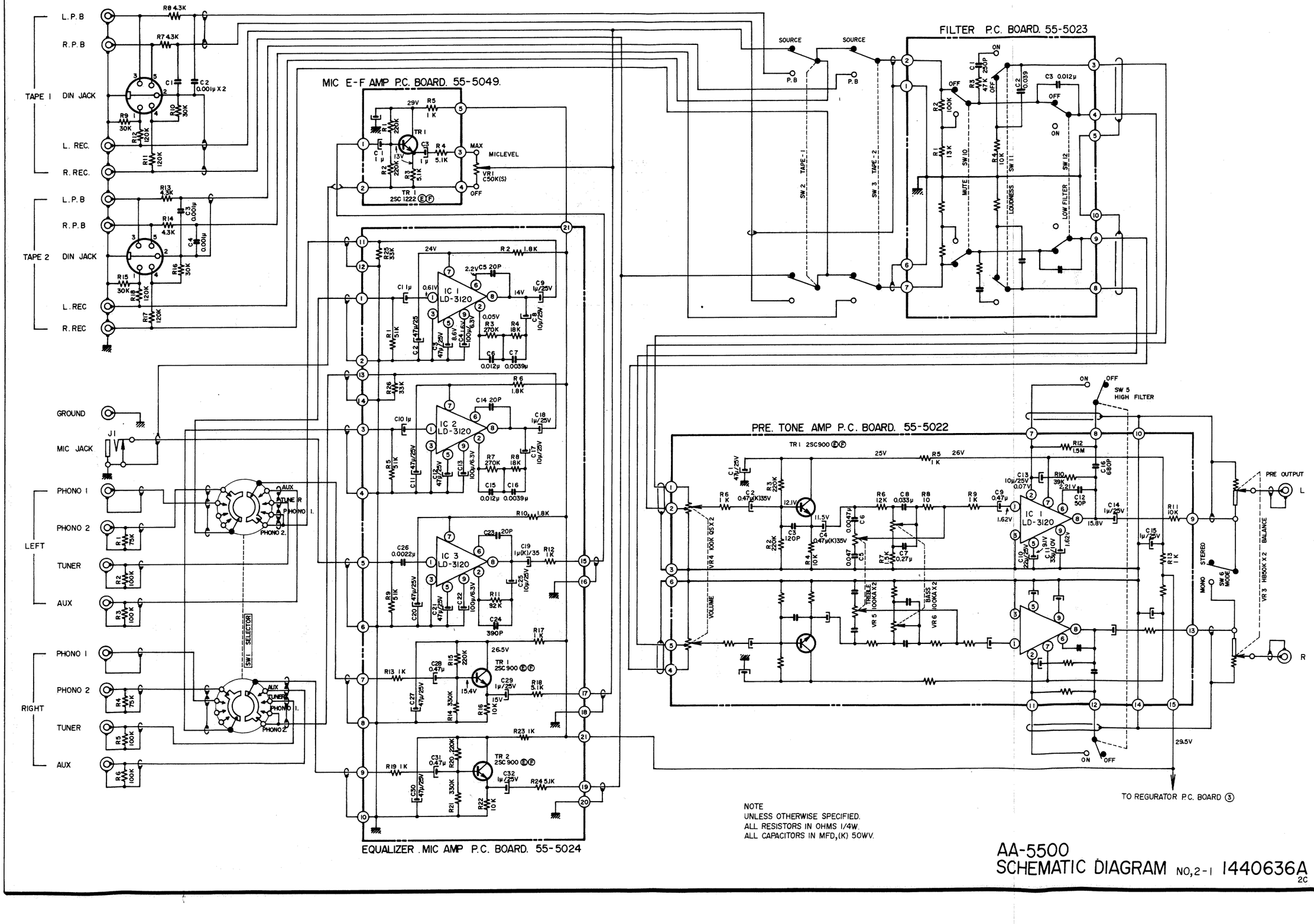
AA-5800 SCHEMATIC DIAGRAM NO,1 1440634A

AA-5800



AA-5800 SCHEMATIC DIAGRAM NO,2 1440635A

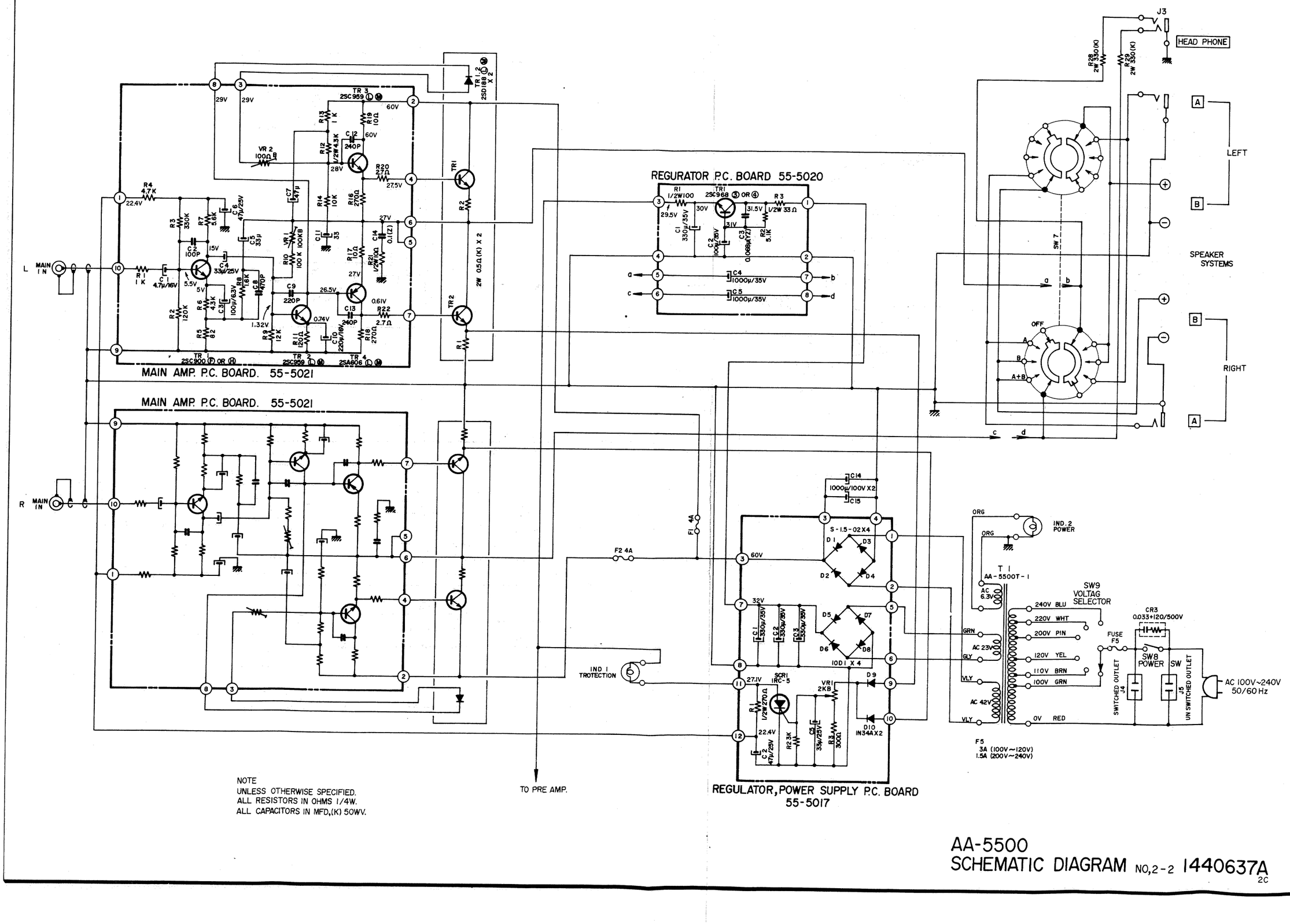
AA-5500 NO,2-1



NOTE
UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS IN OHMS 1/4W.
ALL CAPACITORS IN MFD,(K) 50WV.

AA-5500
SCHEMATIC DIAGRAM NO,2-1 1440636A
2C

AA-5500 NO,2-2

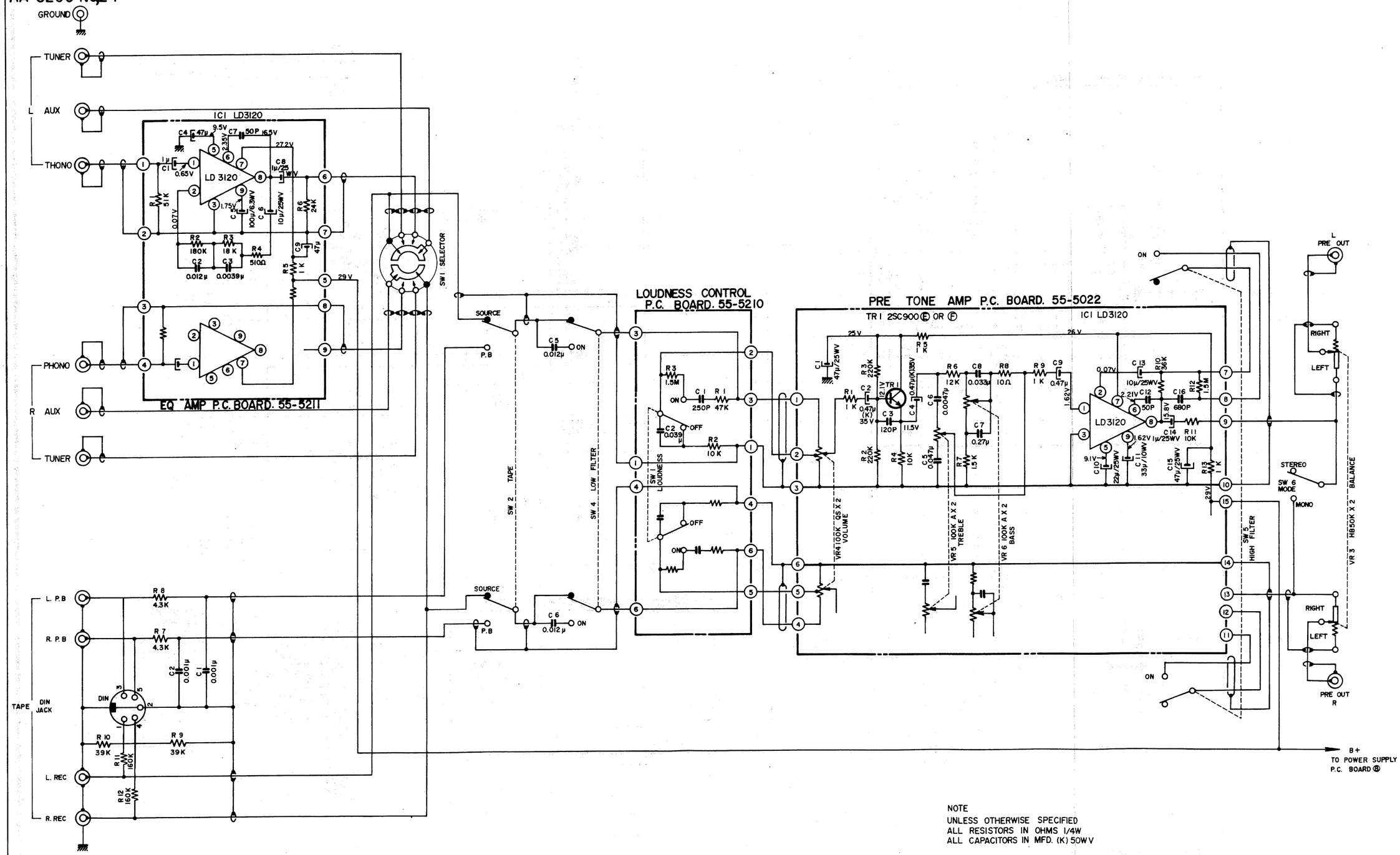


NOTE
UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS IN OHMS 1/4W.
ALL CAPACITORS IN MFD,(K) 50WV.

AA-5500
SCHEMATIC DIAGRAM NO,2-2 1440637A

2C

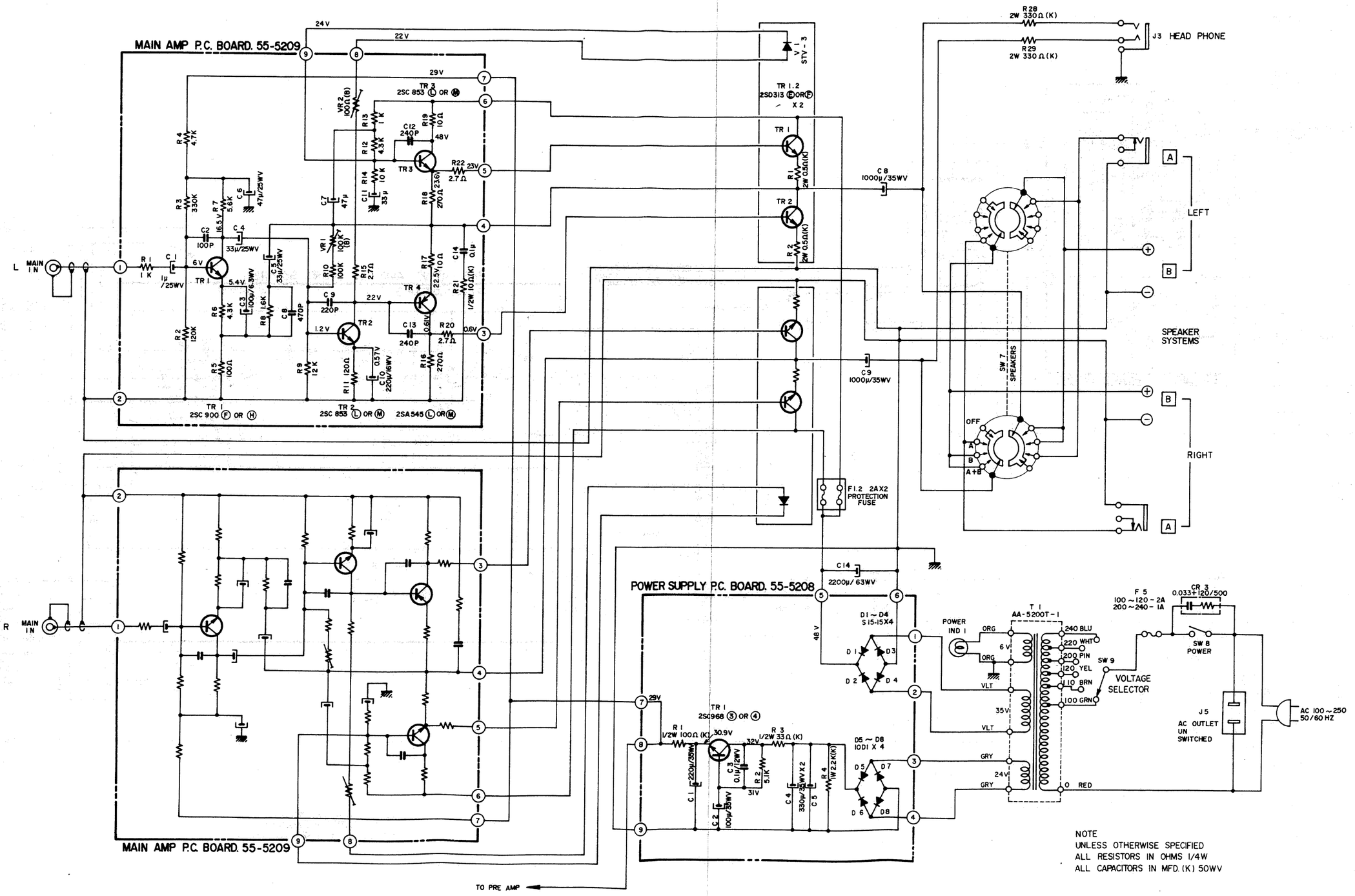
AA-5200 NO,2-1



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W
ALL CAPACITORS IN MFD. (K) 50WV

AA-5200 SCHEMATIC DIAGRAM NO,2-1 1440638A

AA-5200 NO,2-2



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W
ALL CAPACITORS IN MFD. (K) 50WV

AA-5200 SCHEMATIC DIAGRAM NO,2-2 1440639A